

VIA ELECTRONIC FILING

Appl. No.: 10/562,526

Docket No. 99342.00074US

Reply to Office Action of: January 25, 2010

Amendments to the Claims: This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A composition comprising an aqueous dispersion of separated, highly crystalline calcium phosphate platelets which exhibit at least one of a monetite, predominant monetite or deficient apatite structure and wherein at least 80% of the calcium phosphate platelets have a length of between 250 nm and 800 nm.
2. (Previously presented) The composition comprising separated calcium phosphate platelets according to claim 1, wherein the calcium phosphate platelets have a length of between 250 nm and 400 nm.
3. (Previously presented) The composition comprising separated calcium phosphate platelets according to claim 1, wherein the calcium phosphate platelets have a thickness of between 1 nm and 40 nm.
4. (Previously presented) The composition comprising separated calcium phosphate platelets according to claim 3, wherein a plurality of the platelets have a monetite structure exhibiting a chemical shift of between 1.4 ppm and 1 ppm as measured by phosphorus-31 MAS NMR.
5. (Previously presented) The composition comprising separated calcium phosphate platelets according to claim 3, wherein a plurality of the platelets have an apatite structure exhibiting a chemical shift of between 3 ppm and 3.4 ppm, measured by phosphorus-31 MAS NMR.
6. (Previously presented) The composition comprising separated calcium phosphate platelets according to claim 1, wherein the calcium phosphate platelets have a calcium to phosphorus molar ratio of between 0.95 and 1.4.

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7. (Previously presented) The composition comprising separated calcium phosphate platelets according to claim 3, wherein the calcium phosphate platelets have a calcium to phosphorus molar ratio of between 1.25 and 1.67.
8. (Cancelled)
9. (Previously presented) A colloidal dispersion comprising separated calcium phosphate platelets according to claim 3 in an aqueous solution containing a dispersing agent.
10. (Currently amended) A method for preparing an aqueous dispersion of highly crystalline, separated calcium phosphate platelets which exhibit at least one of a monetite, predominant monetite or deficient apatite structure ~~wherein the calcium phosphate platelets have a length of between 250 nm and 800 nm~~ comprising the steps of:
- i) preparing a solution of calcium salt and adjusting the pH of the solution to a selected value of between 4 and 6;
 - ii) adding a phosphate solution to the solution obtained in step i) over a period of time of between 30 minutes and 4 hours, so as to obtain a calcium to phosphorus molar ratio of between 1 and 2.5, wherein the pH is maintained constant at a the selected value of between 4 and 6;
 - iii) heat treating the solution obtained in step ii) at a temperature of between 50°C and 95°C;
 - iv) separating the calcium phosphate platelets formed from the solution obtained in step iii); and
 - v) preparing a dispersion of the calcium phosphate platelets in an aqueous solvent, wherein the calcium phosphate platelets are separated, and wherein at least 80% of the calcium phosphate platelets have a length of between 250 nm and 800 nm;
- wherein in at least one of steps i) or ii), the solutions further comprise ammonium ions.

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11. (Currently amended) A method for preparing an aqueous dispersion of highly crystalline, separated calcium phosphate platelets which exhibit at least one of a monetite, predominant monetite or deficient apatite structure ~~wherein the calcium phosphate platelets have a length of between 250 nm and 800 nm~~ comprising the steps of:

- i) preparing a solution of calcium salts and adjusting the pH to a selected value of between 4 and 6;
- ii) adding a phosphate solution to the solution obtained in step i) over a period of time of between 30 minutes and 4 hours, so as to obtain a calcium to phosphorus molar ratio of between 1 and 2.5, wherein the pH is maintained constant at the selected value of between 4 and 6;
- iii) heat treating the solution obtained in step ii) at a temperature of between 50°C and 95°C;
- iv) adjusting the pH of the solution obtained in step iii) to a value of between 8 and 9.5; and
- v) separating the calcium phosphate platelets formed from the solution obtained in step iv); and
- vi) preparing a dispersion of the calcium phosphate platelets in an aqueous solvent, wherein the calcium phosphate platelets are separated, and wherein at least 80% of the calcium phosphate platelets have a length of between 250 nm and 800 nm;

wherein in at least one of stages i) or ii), the solutions further comprise ammonium ions.

12. (Previously presented) The method according to claim 10, wherein the solution of calcium salt is a CaCl_2 or $\text{Ca}(\text{NO}_3)_2$ solution.

13. (Previously presented) The method according to claim 10, wherein the concentration of calcium salt in the solution of calcium salt is between 1M and 2.5M.

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14. (Previously Presented) The method according to claim 10, wherein the phosphate solution is a solution of $(\text{NH}_4)_2(\text{HPO}_4)$ or $(\text{NH}_4)(\text{H}_2\text{PO}_4)$.

15. (Previously Presented) The method according to claim 10, wherein the calcium to phosphorous molar ratio is between 1.3 and 1.7.

16. (Cancelled)

17. (Previously presented) The method according to claim 10, wherein the temperature of the heat treatment in step iii) is between 60°C and 90°C.

18. (Cancelled)

19. (Previously presented) The method according to claim 11, wherein the solution of calcium salts is a CaCl_2 or $\text{Ca}(\text{NO}_3)_2$ solution.

20. (Previously presented) The method according to claim 11, wherein the concentration of calcium salts in the solution of calcium salts is between 1M and 2.5M.

21. (Previously presented) The method according to claim 11, wherein the phosphate solution is a solution of $(\text{NH}_4)_2(\text{HPO}_4)$ or $(\text{NH}_4)(\text{H}_2\text{PO}_4)$.

22. (Previously presented) The method according to claim 11, wherein the calcium to phosphorous molar ratio is between 1.3 and 1.7.